

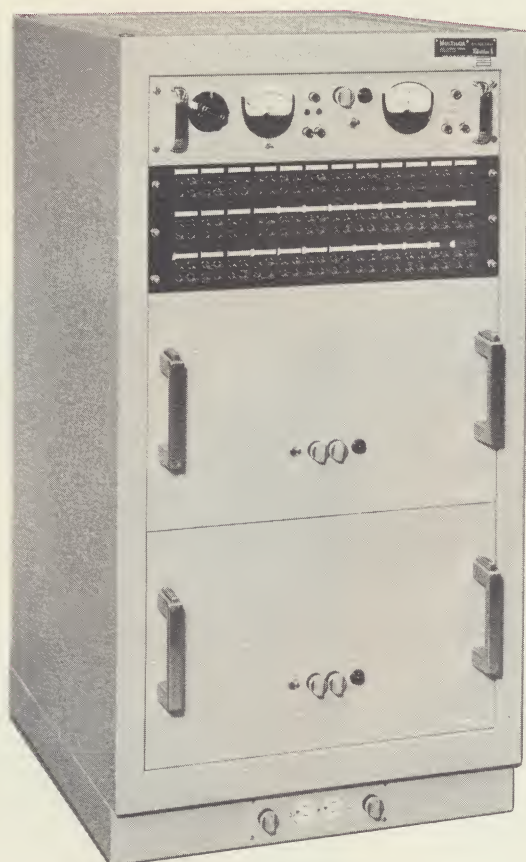
Robertshaw

ELECTRONIC SYSTEMS
AND COMPONENTS

Multilok[®] 6000 TELEGRAPH TERMINAL

AN/FGC-76(V)

DATA SHEET
MODEL 6000



DESCRIPTION

- Designed for wireline, microwave or tropospheric scatter voice frequency circuits.
- Full duplex, frequency division multiplex.
- Thirty-two 100-wpm independent asynchronous channels.
- Modest bandwidth requirements of phase shift keying permit 100-cps channel spacing.
- Modular construction.
- Available with 16, 24, 28, and 32 channels to accommodate traffic needs or circuit characteristics.

AERONAUTICAL AND INSTRUMENT DIVISION

ROBERTSHAW CONTROLS COMPANY

SANTA ANA FREEWAY AT EUCLID STREET • ANAHEIM, CALIFORNIA

OPERATIONAL FEATURES

- Input and output keying options selected by strapping:
 - Polar, neutral, dry contact and voltage inputs.
 - Polar/neutral solid state relay outputs.
- Back-to-back test switching of individual channels bridges demodulator across uninterrupted on-line modulator signal.
- Parallel and series jacks in each send and receive loop facilitate rapid fault isolation.
- Test panel provides VU meter, loop current meter, variable speed dot generator, and single channel polar/neutral loop supply.
- Versatility of alternate channel configuration:
 - 16, 24, or 28 channel options convertible to full 32 channel by simple plug-in of additional channel modules.
 - May be configured as two independent 16-channel terminals on special order
- Vertical stacking and front access only installation possible for limited space applications.

MAINTENANCE AND RELIABILITY

- Fully transistorized.
- Identical active subassemblies for all channels: frequency-selective subassemblies passive.
- Module extenders of rigid printed circuitry for ease of maintenance.
- Plug-in power supplies replaceable in seconds.

SPECIFICATIONS

Transmitting.....	32
Receiving.....	32
Spacing(on center frequencies 350 to 3450 cps).....	100 cps
Teletype Distortion.....	Less Than 5% Average
Differential Delay.....	Less Than .003 sec

Capacity Per Channel.....	Up to 75 Bauds(100 wpm) *
Bandwidth.....	310 to 3490 cps

Input.....	20 or 60 ma neutral
	20 - 35 ma polar
	Dry Contact
	Voltage (0, +6v)
Output.....	600 ohms balanced, 0 dbm max.

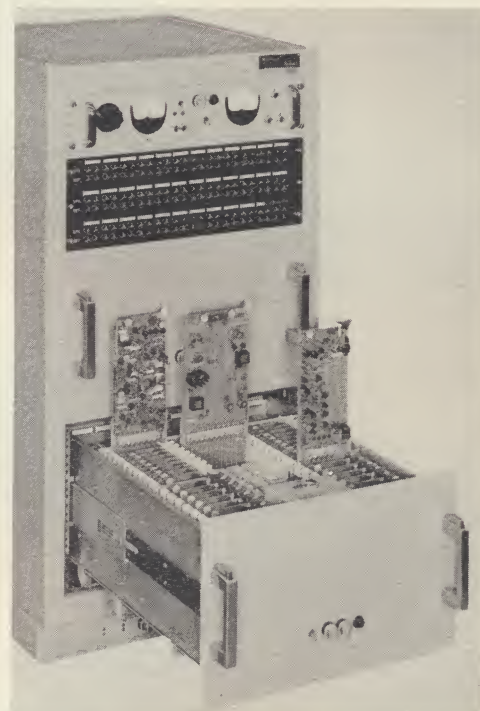
Input..... 600 ohms balanced, 0 to -40 dbm
Output..... Solid State Relay, 70 ma
 125 v dc max. neutral or
NEL ±62.5 v dc polar keying.

VU Meter:
Range..... -44 to +6
Input Impedance(selectable)..... 600, 6000, 28,000 ohm

Ambient..... 0° to 50° C

105-130 volts, 50-60 cycle, single phase, 175 watts.

● WEIGHT..... Approx. 450 Pounds



*One 150 baud channel may be substituted for three 75 baud channels as a standard option.

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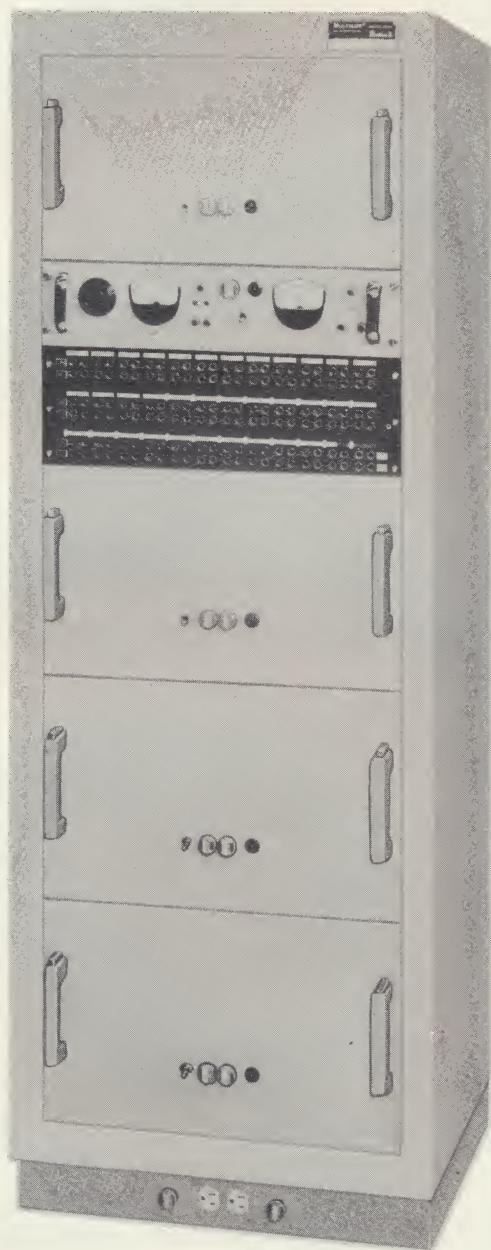


ELECTRONIC SYSTEMS
AND COMPONENTS

Multilok[®] 6001 TELEGRAPH TERMINAL

DATA SHEET
MODEL 6001

AN/FGC-75(V)



DESCRIPTION

- Designed for high frequency Radio voice frequency circuits.
- Full duplex, frequency division multiplex.
- Up to Twenty-eight 100-wpm independent asynchronous channels in 3 KC band.
- Modest bandwidth requirements of phase shift keying permit 100-cps channel spacing.
- Solid state modular construction.
- Available with 16, 24, 28, or 32 channels to accommodate traffic needs or circuit characteristics.

OPERATIONAL FEATURES

- Input and output keying options selected by strapping:
 - Polar, neutral, dry contact and voltage inputs.
 - Polar/neutral solid state relay outputs.
- Back-to-back test switching of individual channels bridges demodulator across uninterrupted on-line modulator signal.
- Parallel and series jacks in each send and receive loop facilitate rapid fault isolation.
- Test panel provides VU meter, loop current meter, dot generator, and single channel polar/neutral loop supply.
- Optional channel configurations:
 - 16, 24, or 28 channel options convertible to full 32 channel by simple plug-in of additional channel modules.
- Front access installation possible for limited space applications.

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SANTA ANA FREEWAY AT EUCLID STREET • ANAHEIM, CALIFORNIA

Transmitting	28 (3 KC), 32 (4 KC)
Receiving	28 (3 KC), 32 (4 KC)
Spacing(on center frequencies 350 to 3450 cps)	100 cps
Differential Delay	Less Than .003 sec

Modulation Rate	Up to 75 Bauds (100 wpm)
Bandwidth	310 to 3090 cps (3 KC)
	310 to 3490 cps (4 KC)
Modulator	
Loop Input	-20 or 60 ma neutral
	30 - 35 ma polar
	Dry Contact
	Voltage (0, +6v)
Output	600 ohms balanced, 0 dbm max.
Demodulator	
Input	600 ohms balanced, 0 to -40 dbm
Loop Output	Solid State Relay, 70 ma
	125 v dc max. neutral or
	±62.5 v dc polar keying.

VU Meter:	
Range	-44 to +6 dbm
Input Impedance (selectable)	600, 6000, 28,000 ohms
Loop Current Meter	100-0-100 ma

Ambient 0° to 50° C

105-130 volts, 50-60 cycle, single phase, 350 watts.

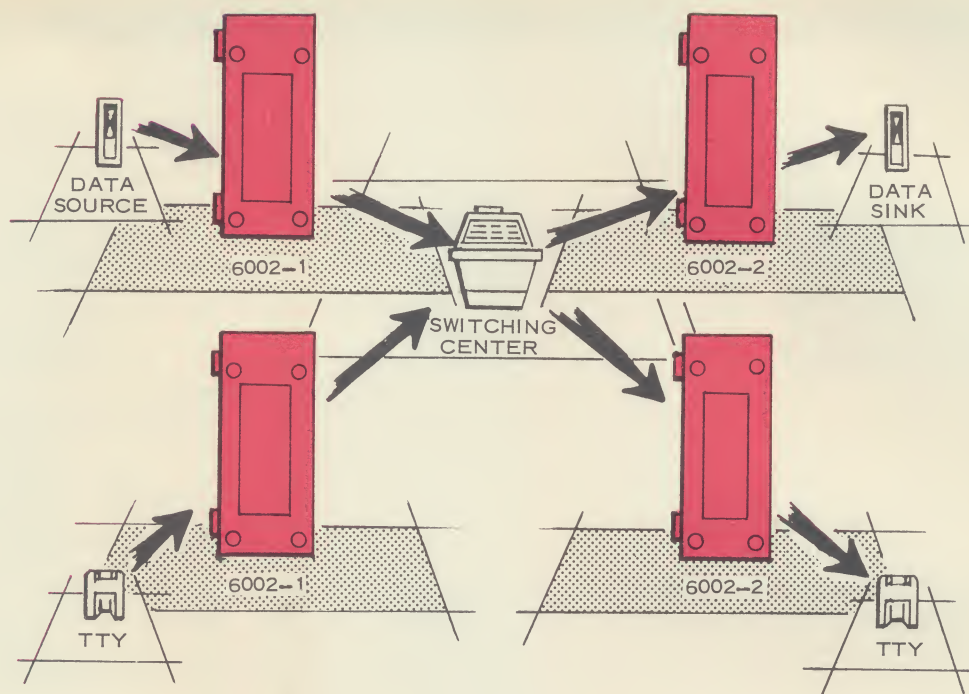
● WEIGHT Approx. 800 Pounds

- Fully transistorized.
- Identical active subassemblies for channels: frequency-selective subassemblies passive
- Plug-in power supplies replaceable in seconds.
- Module extenders of rigid printed circuitry for ease of maintenance.

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**MODEL 6002
MULTILOK®
TONE KEYSER
AND CONVERTER**



CONSTRUCTION AND MAINTENANCE

Each MULTILOK 6002-1 Modulator and 6002-2 Demodulator is contained in a metal case, 1-9/16 x 3¼ x 5¾-inches in size, adapted for "universal" mounting. All circuits are solid-state, and components are mounted on printed circuit cards rigidly supported in each case. Power and signal connections are made through non-interchangeable plugs and receptacles which are furnished with the equipment.

MULTILOK demodulators are so designed that they may be operated in parallel across a 600 ohm circuit; thus, a single modulator may provide a signal for reception at a number of different locations.

The modulator and demodulator both have self-contained power supplies and operate from a 115V ac supply. To provide loop current, an auxiliary power supply (Robertshaw No. 6006) is available for 60 ma $\pm$ 15%, 125V or 20 ma $\pm$ 15%, 48V dc output.

By making appropriate connections in the demodulator signal connector plug, a Mark-Hold circuit can be made operative for teletypewriter reception. This circuit is effective upon loss of signal or on sustained spacing signal.

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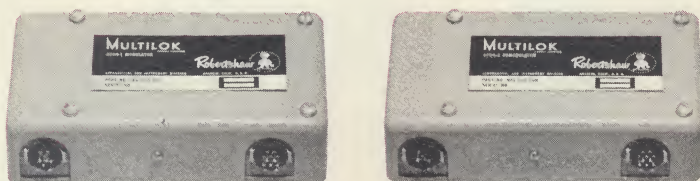
ELECTRONIC SYSTEMS
AND COMPONENTS

**TONE KEYS
AND CONVERTER**

MULTILOK[®] 6004

6004-1 (KY-516/UGT) - 6004-2 (CV-1720/UGR)

DATA SHEET
MODEL 6004



DESCRIPTION

GENERAL: The MULTILOK 6004 system consists of a Modulator (keyer), Model No. 6004-1, and a Demodulator (converter), Model No. 6004-2. This equipment is designed for intraoffice and station distribution of audio-frequency binary signals for control applications such as tape distributor clutches or operation of teleprinters or other binary termination apparatus at rates up to 75 bps. The system operates on a frequency-shift-keying principle transmitting intelligence over twisted-pair (shielded) conductors.

OPERATION: The 6004 system operates from two discrete tone frequencies dependent upon the state of the binary input keying signal fed into the modulator. This resulting frequency shifted signal is then delivered to the demodulator which interprets the frequency shifts to reconstruct the original signal and retrieve the binary intelligence without ambiguity.

VERSATILITY: The 6004 system supplies the subcarrier frequencies, the frequency-shift circuits, and a solid-state relay at the demodulator output. Since the 6004 system is non-synchronous, each circuit independently transmits binary signals of any duration or baud length at any rate up to 75 bits per second. Any intelligence in binary form such as teletypewriter code, control commands, and Morse code can be transmitted by the 6004 system.

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ROBERTSHAW CONTROLS COMPANY

SANTA ANA FREEWAY AT EUCLID STREET • ANAHEIM, CALIFORNIA

DESIGN FEATURES

- *Asynchronous Operation*
- *Solid State Throughout*
- *Inherent Ambiguity Resolution*
- *Remote Control*

SPECIFICATIONS

SIGNAL

Transmission: Frequency shift keyed tone (2125 cps center frequency) over twisted-pair shielded conductors.

Bandwidth: 85 cps.

Data Rate: 0 to 75 bps.

Teletypewriter Rate: 0 to 100 wpm.

TEMPERATURE

Operating: 0 to 50°C.

Storage: -40 to 65°C.

MODULATOR (Keyer) 6004-1

Input:

Impedance: 1000 ohms.

DC Keying:

(a) External voltage: 0 and + 6v $\pm$ 1.5v dc (isolated input).

(b) External current: 0 and 60 ma $\pm$ 15 ma or 0 and 20 ma $\pm$ 5 ma, applied from external source with external shunt resistor to produce required voltage to isolated input.

(c) Dry contact: Internal dc supply in series with input (input not isolated).

Output:

Impedance: 600 ohms (isolated).

Center Frequency: 2125 cps.

Frequency Shift:

2082.5 $\pm$ 5 cps to 2167.5 $\pm$ 5 cps (0° to 50°C).

Level: -10 dbm $\pm$ 1 db.

Size: 1-9/16 x 3 3/4 x 5 3/4 inches.

Weight: 1 lb, 8 oz.

Power Requirements:

115 v $\pm$ 10%, 50/60 cycle, 5 watts.

DEMODULATOR (Converter) 6004-2

Input:

Impedance: 12,500 ohms.

Signal: 2125 cps at -10 dbm to -25 dbm.

Output:

Isolated internal solid-state relay capable of switching 130v dc 100 ma maximum.

Mark-Hold: Optional.

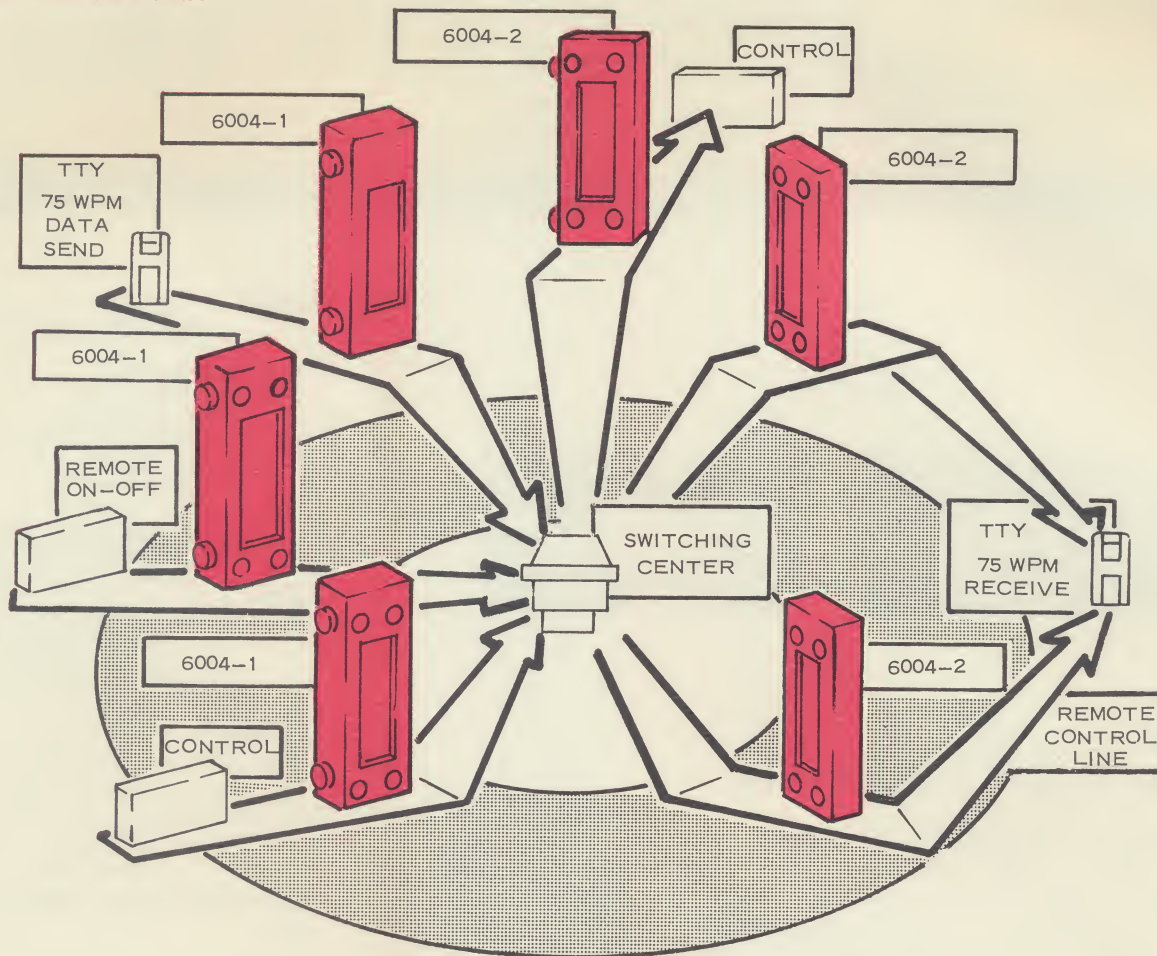
Size: 1-9/16 x 3 3/4 x 5 3/4 inches.

Weight: 1 lb, 7 oz.

Power Requirements:

115 v $\pm$ 10%, 50/60 cycle, 0.085 amp, 5 watts.

**MODEL 6004
MULTILOK®
TONE KEYER
AND CONVERTER**



CONSTRUCTION AND MAINTENANCE

Each MULTILOK 6004-1 modulator and 6004-2 demodulator is contained in a metal case, 1-9/16 x 3 3/4 x 5 3/4-inches in size, adapted for "universal" mounting. All circuits are solid-state, and components are mounted on printed circuit cards rigidly supported in each case. Power and signal connections are made through non-interchangeable plugs and receptacles which are furnished with the equipment.

MULTILOK demodulators are so designed that they may be operated in parallel across a 600 ohm circuit; thus, a single modulator may provide a signal for reception at a number of different locations.

The modulator and demodulator both have self-contained power supplies and operate from a 115V ac supply. To provide loop current, an auxiliary power supply (Robertshaw No. 6006) is available for 60 ma $\pm$ 15%, 125V or 20 ma $\pm$ 15%, 48V dc output.

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Robertshaw

AERONAUTICAL AND INSTRUMENT DIVISION • ANAHEIM, CALIF.



ROBERTSHAW CONTROLS COMPANY

41 EAST CRESCENT BOULEVARD • CAMDEN, NEW JERSEY • 08103

Atten: A. Stanko

ROBERTSHAW CONTROLS COMPANY
41 E. CRESCENT BLVD.
CAMDEN 3, N. J.



MULTILOK MARKET SURVEY

Company _____ Interviewed by: _____
 Address _____ Date : _____
 Interviewed: _____

Name	Title	Department
_____	_____	_____
_____	_____	_____
_____	_____	_____

- I Are you now using data modems? Yes ____ No ____
- A. Application:
 Teletype: Yes ____ No ____ Number of channels _____
 If used for teletype, does present equipment provide adequate number of channels? ____
 Serial Data: Yes ____ No ____ Bit Rate _____
- B. Interface requirements _____
- C. Transmission Medium
 Leased ____ Customer Owned ____
 Wire ____ HF Radio ____ Microwave ____
 Circuit Bandwidth _____
- D. Number of modems in use _____
 Modem manufactured by _____ Model/Cost _____
 Model/Cost _____
- E. Purchased ____ Or manufactured ____ Or leased ____
- F. Does modem utilize quick-change plug-in modular construction? Yes ____ No ____
 Are modules, if used interchangeable from channel to channel to
 facilitate maintenance and reduce spares requirements? Yes ____ No ____
- G. Good and bad features _____

II Characteristics of data modem you would prefer to have now in your present equipment or equipment you may be considering for purchase:

- A. Application _____
- B. Data Bit rate _____ Serial _____ Parallel _____
- C. Interface requirements _____
- D. Estimated quantity _____
- E. Estimated price _____
- F. Would capability to handle, in the same bandwidth, serial data simultaneously with, and independent of a number of teletype channels, be advantageous to your current or future requirements? _____
- G. Is excessive floor space or air conditioning load an objectionable feature of present equipment? _____

III Data bit rate anticipated for future applications

1965 _____	Application: _____
1966 _____	_____
1967 _____	_____
1970 _____	Quantity: _____

IV Accessory Equipment (list on back of page)